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ABSTRACT

The effects of selected superlearning techniques on the retention of technical vocabulary by Saudi Arabian students learning English as a second language were examined. The sample consisted of 14 Saudi Arabian nationals aged 18 to 21 years enrolled in college level technical vocabulary classes. The study involved three weeks of treatment followed by a test of retention. The superlearning approach involved the use of music, relaxation, and rhythmic speaking to increase retention of factual material. Results of using the superlearning approach were inconclusive. The data indicate no individual effects from the relaxation or the relaxation combined with background music treatments. Although a slight difference was found between the two groups on the posttest mean scores, the cumulative effects of relaxation, background music, and special teacher phrasing probably did not account for this result. It is concluded that further studies are needed to create a valid comparison of the superlearning method with other methods. Such a study should observe larger numbers of students over longer periods of time. (Author/RW)

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A Comparison of the Effects of Super Learning Techniques on the Learning of English as a Second Language

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A Study Conducted by Pueblo Community College in Cooperation with the International Education Management Corporation

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ABSTRACT

A study using Saudia Arabian Nationals learning English as a second language was conducted to test the value of the "Superlearning" techniques as suggested in Ostrander and Schroeder's book Superlearning. The specific techniques of relaxation, synchronized music, and synchronized phrasing were used for treatment and comparisons of student achievement scores were used for the measurement of results. Results indicate a slight significance with the cumulative effects of the treatment, but no conclusive evidence suggests that use of the "Superlearning" techniques with this population was valuable. Additional research is needed.

INTRODUCTION

Purpose of the Study

The purpose of the study was to compare the effects of selected superlearning techniques on the retention of technical vocabulary by Saudia Arabian students studying English as a second language. The results of the study were expected to be useful in determining whether the use of a basic superlearning technique or isolated factors of the basic technique would be advantageous in the learning of technical vocabulary by Arabic speaking males learning English as a second language. The research was conducted at Pueblo Community College.

Background and Significance

Pueblo Community College is a state supported institution which is located in the city of Pueblo, Colorado. Current full-time enrollments amount to 500 secondary students in special vocational training and approximately 1,300 post-secondary students. The institution has recently become an autonomous institution of higher education resulting from a separation with the University of Southern Colorado (PCC Catalog, 1982-83, p. 7).

Pueblo Community College is in a growth mode and has recently taken action to link with business, industry, and the military to develop a significant activity in contract training. It was in this interest that Pueblo Community College signed an agreement with the International Education Management Corporation to host an English as a Second Language Center on the College campus. The group of ESL students consisted of twenty-one employees of the Saudia Airlines Company. All of the students were Saudia Arabian nationals and had received approximately four weeks of English training at the Center.

It was the interest of Pueblo Community College and the International Education Management Corporation to examine any feasible teaching methods or techniques which could result in greater learning efficiency and effectiveness.

The results of the study have been supplied to the College deans of instruction, to International Education Management officials, and to the faculty of the English as a Second Language Center. The results will also be presented to the College secondary and post-secondary faculty during a regularly scheduled in-service development workshop during the Fall of 1983.

The significance of superlearning has been a popular topic of recent educational research and debate. To be sure, educators of language instruction across the United States have been especially excited about the prospects of "Superlearning" since the Ostrander and Schroeder's book of the same name was published in 1979. Research studies using the "Superlearning" techniques have been collectively inconclusive, yet the subject has scarcely been researched enough to make any final determinations about the effectiveness of the methods presented, (Benitez-Bordon & Others, 1976; Bancroft, 1972; Kline, 1976; and Wagner and Tilney, 1982). The Benitez-Bordon

studies support the call for additional research and the 1976 study concludes that both the indi- vidual and cumulative effects of the treatment, i.e., suggestion, synchronized music, and breathing is significant for English speaking persons learning Spanish vocabulary. Kline's extensive study involving high school students attempted to discover the best method for applying Lozanov's technique. The study did not state conclusions, but greatly supported the idea of additional studies on more effective learning methods. The Lozanov approach to rapid learning spawned most of the present interest in the subject, including that of Ostrander and Schroeder. Lozanov's approach, more commonly called "Suggestopedia," is reportedly used in the Soviet Union and in Bulgaria and involves the use of relaxation exercises, vocal synchronization of the teacher, and synchronized music. The use of these techniques in the classroom reportedly increases learning rates by creating a neurological harmony between the left and right cerebral hemispheres of the brain. The areas of vocabulary and language retention have been reported to be especially conducive to Lozanov's techniques.

National interest in the subject appears to be on the increase and a journal on the broad subject area is now being published by an educational society in Iowa. The society, named SALT for Suggestive-Accelerative Learning and Teaching, also provides teacher training and hosts international conferences. The experiment at Pueblo Community College used the technique suggested in the book Superlearning in an effort to test its utility in teaching technical English vocabulary to Saudia Arabian Nationals.

Definition of Terms

Class session, A 50 minute formal classroom meeting of students and an instructor.

Grade achievement, The numerical score achieved on a written examination that is administered to all students.

Population, The number of students involved in the study, i.e., treatment and control groups.

Superlearning, A popular title ascribed to a learning technique developed in Bulgaria by Dr. G. Lozanov which involves the use of music, relaxation, and rhythmic speaking to increase retention of factual material. Sometimes referred to as autogenics.

Technical vocabulary, English words commonly used in technical or work-related, i.e., screwdriver, gear, transmission.

Independent variable, The application of relaxation training, music, and rhythmic speaking in the classroom.

Dependent variable, The grade achievement of students involved in the study.

Subjects

The sample population used in the study involved 14 Saudia Arabian nationals enrolled in two sections of 50 minute technical vocabulary classes held at Pueblo Community College. The students were male, between the ages of 18 and 21 years of age. The class sections were taught and administratively operated by the International Education Management Corporation. Both sections were taught five days weekly in the mornings. The students were not selected randomly, but the treatment group selected was normally viewed as the lower achieving group due to previous non-technical vocabulary testing. However, the pre-test on technical vocabulary indicated that the treatment group had a mean score slightly above that of the control group. Both class sections received identical subject matter and were taught by the same instructor. Each class section had met for approximately five class sessions on technical vocabulary training before commencement of the study.

Design

A quasi-experimental design was used in the study since it was recognized that there were many uncontrolled variables which might contribute to the effect on the dependent variable. Further, it was recognized that the sample populations were derived from two major groups, English language classes, that were already established and were not randomly selected by the researcher.

From these two class sections, one was randomly selected by the flip of a coin to be the treatment or experimental group. The other class section was the control group. Both classes received the same 17 technical words for learning during the three-week study. The treatment group, group I, received training in relaxation skills for fifteen minutes daily for three days prior to the beginning of the study. At the beginning of the study, immediately following the relaxation training, the group I students were asked to consciously apply the learned relaxation techniques during their technical vocabulary classes for the following three weeks. During the second week, (five days), instrumental classical music with sixty beats per minute, was played by cassette tape in the classroom. The music was played in the background during the entire class sessions for two consecutive weeks. The students were reminded to relax during these class sessions. Also, during the third week, (five days), the teacher presented the day's technical vocabulary words in a rhythmic style with approximately four seconds of vocalization followed by four seconds of vocal silence. The intonation, inflections, and volume of the spoken words were varied with each utterance. The teacher was instructed how to prepare the vocabulary in the proper style and how to voice the vocabulary in the proper manner. The music continued to be played in the background and the students were again reminded to relax during the class sessions. Table I, displays the experimental design graphically:

TABLE I

Groups and Treatments

	Treatment	
Group I	relaxation	week one
Group II	none	
Group I	relaxation & music	week two
Group II	none	
Group I	relaxation, music, rhythmic vocabulary	week three
Group II	none	

Measurement

The study involved three weeks of treatment and the significance of retention was determined via class section mean scores of student achievement. Student achievement was measured by the results of a vocabulary test given weekly. The mean score measurements involved four tests per student. All students in both groups received identical tests. The tests were objective in nature and were administered on the same mornings to each group to avoid contamination of the study. Each group received a vocabulary test from the "TOFFEL" over 17 technical words on the day before the study began. Each group received teacher-made tests at the end of week one and week two. At the end of week three, each group received the same pre-test "TOFFEL" on the 17 technical words. Neither group knew it would be receiving the "TOFFEL"-extracted test at the end of the study.

The weekly achievement scores were measured and compared by a standard T-test for independent groups at the end of the study to determine if there was any significant difference between the two groups and among the three treatment factors. A comparison of the two groups pre-study mean scores was made to determine if any pre-existing achievement difference was present. The administration of four total tests to be considered in the statistical analysis was viewed as a stabilizing factor which would represent a more valid measure of significance, if any, derived from the treatment. A delayed treatment implementation, after four vocabulary class sessions, served as a leveling factor and was an advantage in the design since anxieties involving teacher and student expectations over new subject matter had been diminished.

Research studies of this type frequently must take precautions against a variable known as the Hawthorne effect (Turney and Robb, 1971). The Hawthorne effect may invalidate a study in which the subjects in the study begin to react to the research condition in an exaggerated or atypical manner rather

than to behave normally under the treatment involved. If a Hawthorne effect did occur in the proposed study, it would have affected all subjects equally regardless of any group differentiation. All students were informed about the general purpose of the research, but were given no details or research expectations. It was assumed that this situation would not be a significant factor in this study.

Statistical Analysis

To affect the proposed comparison of grade achievement levels between students in the two groups, a T-test for independent groups with 12 degrees of freedom was administered. The pre-test and weekly test scores for each student were combined to establish group means which were used in the analysis. A .05 level of significance was utilized.

Results and Discussion

A T-test for independent groups with 12 degrees of freedom was performed with the means of the two groups for the pre-test and each of the three weekly tests. These means are displayed in Table II.

Table II

Groups and Testing Mean Scores

	(T) Group I	(C) Group II
Pre-test	39	31
Week one end	70	77
Week two end	79	82
Week three end (Post test)	100	84

Table III displays the raw test scores for both groups.

Table III

Raw Test Scores

Students (T) Group I	Pre-Test	Week One	Week Two	Week Three (Post Test)
51	41	92	80	100
52	18	84	82	100
53	53	8	94	100
54	35	48	64	100
55	65	66	45	100
56	18	92	94	100
57	41	100	100	100
(C) Group II				
51	35	92	100	100
52	41	68	91	94
53	24	100	100	94
54	35	40	45	53
55	24	48	55	71
56	35	100	91	94
57	24	92	91	82

The statistical analysis, T-test for independent groups with 12 degrees of freedom is displayed in Table IV.

Table IV

T-Test Results

N=14

Pre-Test	Week One Test	Week Two Test	Week Three Test (Post Test)
-0.356	0.458	0.178	-2.522

Critical T value at .05 level of significance = $\pm$ 2.179

From an analysis of the data it is clear that no significant difference between the groups existed prior to the beginning of the treatment. It should be noted, however, that an initial difference in mean scores did exist between the two groups and no equating statistical test was used in the data analysis. It is equally clear that no significance resulted from either the week one end test or the week two end test. A significance was present at the week three end test or post test. Group I, the treatment group, dropped in mean score comparison to Group II, the control group at the end of the first week's treatment of relaxation. It should be noted, however, that one of the seven students in Group I scored the inordinately low score of 8 of 100 possible points. Group I was also behind Group II in the mean score comparison at the end of week two which involved the combined treatment of relaxation and background music. Group I did achieve a significantly greater mean score at the end of the third week, or post test, when compared to Group II. It should be noted that a ceiling effect was realized in the post test where all seven students in the treatment group achieved scores of 100 out of a total possible score of 100.

Conclusions

It appears that the value of using Ostrander and Schroeder's methods for Superlearning among related Saudia Arabian students studying technical vocabulary in the English language is inconclusive. The data in the study indicates no individual effects from the relaxation or the relaxation combined with background music treatments. Although a slight significance was reported between the two groups on the post-test mean scores, it seems unlikely that the cumulative effects of relaxation, background music, and special teacher phrasing was the sole cause of the significance. Since the pre-test mean scores had an initial mean score difference, (not significant), and since the

post-test mean score of the treatment group was 100 percent, the significance in this study is suspect. Further, the possibility of a Hawthorne effect changing the study habits of the treatment group cannot be ruled out. Although the treatment group scored more poorly than the control group on tests presented during week one and week two, the perfect post-test scores of the treatment group may indicate a change in study habits during the last week of the study. Although study habits may or may not have changed as a result of the treatment, it is clear that the students receiving the treatment believed that a relaxation exercise before each class was helpful. All of these students continued to consciously relax before each class, six per day, even though the study had been concluded for four weeks. In view of this research study data and the recognized study limitations, the use of the "Superlearning" technique as derived from Ostrander and Schroeder's book is not justifiable when based on pure student performance.

Recommendations

The prospects of establishing a more efficient and effective teaching method must be taken seriously. The claims of Lozanov and others have to be considered judiciously. Although the results of this study were inconclusive, this researcher believes that further work is definitely needed in this area. Specifically, more studies are needed which can create a valid comparison of the Lozanov method to the "Superlearning" method of Ostrander and Schroeder. Additional studies are needed which involve larger numbers of students over longer periods of time. Further, more studies are needed which concentrate totally upon students enrolled in English as a second language.

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